

Serial No. 09/873,454
Art Unit No. 2665

LISTING OF CLAIMS

1. (currently amended) A method for managing data communications between hosts (9) of a switched Ethernet network (8), the method comprising:

a switch of said network dynamically assigning hosts (9) to logical groups of hosts for a session in response to a session request such that the hosts (9) participating in a data communication are assigned to the same group;

said ~~in a~~ switch (1) of the network (8), associating each said group with a service class indicative of requirements for forwarding data across the switch (1) for data communications between hosts (9) in the group, and forwarding received data across the switch (1) in a manner dependent on the service class of the group to which hosts (9) participating in the data communication are assigned; ~~and~~

in the switch, monitoring traffic congestion; and

in the switch (1), disabling data communications between hosts (9) in one or more of said groups when required based on said traffic congestion to satisfy the forwarding requirements for at least one said service class.

2. (original) A method as claimed in claim 1 wherein data communications are disabled for a said group by discarding data received from any host (9) in that group.

3. (canceled)

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4. (original) A method as claimed in any preceding claim wherein the step of assigning hosts (9) to a logical group comprises allocating a group identifier to hosts (9) in that group.

5. (original) A method as claimed in any preceding claim wherein each said logical group comprises a VLAN, and wherein the step of assigning hosts (9) to a logical group comprises allocating a VLAN identifier to hosts (9) in that group.

6. (original) A method as claimed in claim 4 or claim 5 wherein a group is associated with a service class by storing data associating said identifier with that service class.

7. (original) A method as claimed in anyone of claims 4 to 6 including inserting the identifier allocated to a said group in data packets transmitted between hosts (9) in that group.

8. (original) A method as claimed in claim 7 wherein, for at least one said group, the identifier is inserted in data packets by hosts (9) in that group.

9. (original) A method as claimed in claim 7 or claim 8 wherein, for at least one said group, the identifier is inserted by the switch (1) in data packets received from a host (9) in that group.

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10. (original) A method as claimed in any preceding claim wherein a high-priority service class and a low-priority service class are defined in the switch (1), whereby forwarding of received data from hosts (9) in groups associated with the high-priority service class takes precedence over forwarding of received data from hosts (9) in groups associated with the low-priority service class.

11. (original) A method as claimed in claim 10 including, for at least one said group associated with the high-priority service class, calculating a transmission schedule in the switch (1) indicating time periods for receiving data from hosts (9) in the group such that the data received during said time periods will be forwarded by the switch (1) in accordance with the high-priority service 20 class, the schedule being calculated in dependence on the bandwidth required for data communications between hosts (9) in the group.

12. (original) A method as claimed in claim 11 including disabling data communications outside the scheduled time periods for the or each said group associated with the high-priority service class 25 when required to satisfy the forwarding requirements of the high-priority service class.

13. (original) A method as claimed in claim 11 or claim 12 including sending the transmission schedule calculated for a said group to the or each transmitting host (9) in the group.

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14. (original) A method as claimed in any one of claims 10 to 13 wherein the low-priority service class is defined in the switch (1) for best-effort forwarding of received data.

15. (original) A method as claimed in claim 14 including assigning all hosts (9) participating in best-effort data communications to one said group associated with the low-priority service class.

16. (currently amended) A method as claimed in anyone of claims 1 to 2 and 4 to 10 wherein a plurality of different-priority service classes are defined in the switch (1), whereby forwarding of received data from hosts (9) in groups associated with each of said different-priority service classes takes precedence over forwarding of received data from hosts (9) in groups associated with any lower-priority service classes, the method including disabling data communications for groups associated with one or more low-priority service classes when required to satisfy the forwarding requirements of one or more higher-priority service classes.

17. (currently amended) A switch (1) for connection in a switched Ethernet network (8), the switch (1) comprising:

switching circuitry (4) for forwarding across the switch (1) of data received at a port (2) of the switch (1);

assignment means for dynamically assigning hosts in the network to logical groups of hosts for a session in response to a session request;

memory (6) for storing data indicative of an assignment of hosts (9) in the network (8) to logical groups

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of hosts, said assignment being such that the hosts (9) participating in a data communication are assigned to the same group; and

control logic (5) for associating each said group with a service class indicative of requirements for forwarding data across the switch (1) for data communications between hosts (9) in the group, and for controlling forwarding of received data by the switching circuitry (4) in a manner dependent on the service class of the group to which hosts (9) participating in the data communication are assigned;

wherein the control logic (5) is configured to disable data communications between hosts (9) in one or more of said groups when required to satisfy the forwarding requirements for at least one said service class.

18. (original) A switched Ethernet network (8) comprising at least one switch (1) as claimed in claim 17, and a plurality of hosts (9) connected to ports (2) of said at least one switch (1).

19. (currently amended) A computer program element comprising computer program code means which, when loaded in a processor of a switch (1) for connection in a switched Ethernet network (8) ~~wherein hosts (9) of the network are assigned to logical groups of hosts such that the hosts (9) participating in a data communication are assigned to the same group,~~ configures the processor to:

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dynamically assign hosts of the network to logical groups of hosts for a session in response to a session request;

associate each said group with a service class indicative of requirements for forwarding data across the switch (1) for data communications between hosts (9) in the group, and to control forwarding of received data across the switch (1) in a manner dependent on the service class of the group to which hosts (9) participating in the data communication are assigned; and

to disable data communications between hosts (9) in one or more of said groups when required to satisfy the forwarding requirements for at least one said service class.

20. (currently amended) A computer program element comprising computer program code means which, when loaded in a processor of a switch (1) for connection in a switched Ethernet network (8), configures the processor to perform a method as claimed in anyone of claims 1 to 2 and 4 to 16.